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SOURCE Radio, No 7, 1950, pp 4-5.

ALL-UNION SCIENTIFIC SESSION IN CELEBRATION OF SOVIET RADIO DAY

In honor of the 55th anniversary of the invention of radio by A. S. Popov, a scientific session was held in Moscow, 4 - 9 May, by the All-Union Scientific and Technical Society of Radio Engineering and Electrical Communications imeni A. S. Popov, the Ministry of Communications, the Ministry of the Communications Equipment Industry, the Committee of Radio Information of the Council of Ministers USSR, and the All-Union Council of Radio Physics and Radio Engineering of the Academy of Sciences USSR.

The session was opened by the chairman of the organization bureau of the Popov Society, Professor V. A. Kotelnikov, Stalin Prize laureate, who reviewed Soviet achievements in radio in the past year.

Among the 30 reports read were "Development of Soviet Radio Engineering in 1949," by N. D. Psurtsev, Minister of Communications USSR, and "The Tasks of the Organizations for Designing, Building, and Operating Radio Equipment in View of the Present Load on Radio Frequency Bands, by V. I. Irushkin, Chief of State Radio Inspection, Ministry of Communications.

The session was divided into the following sections: broadcasting, receivers, transmitters, television, electroacoustics and sound recording, radio methods, antennas, electromagnetic oscillations, and wire communications.

In the Broadcasting Section (chairman, I. Ye. Goron, Doctor of Technical Sciences, N. V. Naumov spoke on "A New Principle for Allocation and Operation of Wired Radio Center Equipment." He generalized the results of experiments by enterprises of the Latvian SSR in the joint operation of low-power telephone switchboards and wired radio centers located in the same building and serviced by one workman. He pointed out that this arrangement effected economies in manpower and space and reduced administrative expenses. These tests are being introduced in other republics.

The session noted in its resolutions the useful experience gained in complex allocation of telephone and radiofication equipment.

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Engineer I. G. Dembo reported on a wired radio kolkhoz center for radiofication of nonelectrified regions. The low-power wired radio center consists of a receiver-amplifier unit and a power pack. A three-tube superhet with three continuous bands, two pretuned stations, and a 3-stage af amplifier are mounted on a common chassis in the receiver-amplifier unit. This equipment is adapted for supply from batteries, wind-driven generators, or electric networks which are not in continuous operation.

The receiver uses 1A1P (converter) and 1K1P (if amplifier) tubes and a 1B1P diode-pentode (detector and first af stage). The receiver sensitivity is of 200 μ v for long and medium waves and 500 μ v for short waves. The output power of the amplifier is 2 w with two tubes in push-pull and 1 w with one tube. The harmonic factor does not exceed 10%. The frequency response is flat from 100 to 5,000 cps within 6 db.

The receiver-amplifier of the wired radio center requires 650 ma for the filaments at 1.2 v and draws 35 ma no-signal current and 50 ma peak current from the B-battery. A 120 v, wind-driven power unit designed for use with this wired radio center generates three-phase alternating current.

The session in their resolutions noted the need for rapid production of a series of such centers and also requested that the Ministry of the Electrical Industry USSR improve the operating quality of the vibrator power packs which are used in these centers.

In his report, "Comparative Data on Broadcasting by the Frequency and Pulse Modulation Methods," F. V. Kushner, Candidate of Technical Sciences, discussed broadcasting using ultrashort waves with amplitude, frequency, and pulse modulation. Kushner's theoretical work and experimental tests led to the conclusion that FM was preferable in this range.

Ten reports were read in the Section on Radio Receivers (chairman, V. S. Mel'nikov, Stalin Prize laureate). Engineer K. I. Drozdov, spoke on "Experiments in Designing Higher Class Receivers," with interesting data on design and basic parameters (sensitivity, selectivity, quality of reproduction, interference rejection, etc.).

In his report on "Combined AM-FM Reception," F. V. Kushner stated that only FM could make possible high-quality reception in large cities, and that radio programs should be made available on both FM and AM transmissions. He cited results of testing a comparatively simple 8-tube receiver capable of receiving long-, medium-, and short-wave AM stations and FM stations operating between 42 and 60 megacycles.

Engineer Ye. A. Levitin, discussed basic characteristics required of receivers and the most efficient methods of obtaining them in first, second, and third class, and mass-produced radios. Other reports in this section were made by Engineer A. K. Godzevskiy, on "Modern Methods of Testing Receivers and the GOST Plan"; Engineer M. L. Volin, on "Filtering Filament Hum in Amplifiers"; and R. D. Leytes, Candidate of Technical Sciences, on "Designing a Peak Detector."

In its resolutions the session recognized the need for improving the operating qualities of receivers and recommended that the Ministries of the Communications Equipment Industry, of Communications, and of Trade should organize manufacture of cheap receivers with low sensitivity for reception of local or nearby stations. It also recommended better unification and standardization of basic units and parts for wired radio centers and mass-produced radios. It noted the great importance of radiofication in nonelectrified areas and recommended further work on cheap loudspeakers and tubes.

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The following reports were read in the Section on Television (chairman, S. I. Katayev, Candidate of Technical Sciences): "Television Measuring Equipment," by Engineer L. V. Mitel'man; "A Wired Television Unit," by Engineer V. G. Zhirnov; "Method of Finding the Optimum Parameters for Interstage Pulse-Amplifier Circuits," by Engineer V. M. Drugov; "Determination of Parameters for Wide-Band Amplifier-Circuits to Obtain Optimum Characteristics," by Engineer O. V. Lur'ye.

The session requested that the Ministries of Communications and the Communications Equipment Industry, as well as the Committee of Radio Information, Council of Ministers USSR, push work on color television, on enlarging the territory served by the Central Television Broadcasting Bureau, and also on improving the quality and increasing the production of television sets. It stressed the need for cheap equipment for wired television centers.

Among the reports read in the Section of Electracoustics and Sound Recording (chairman, S. N. Rzhevkin, Doctor of Physicomathematical Sciences) was a paper by Engineer P. Ye. Shifman, on "Methods of Solving Sound Reproduction Problems in Modern Receivers." He discussed selection of bands and methods of improving the acoustic-frequency response of receivers (resonators, baffles, phase inverters, etc.).

The session also took up the problem of the industrial noise level in Moscow and other large industrial centers, where this level has risen so much that medium- and long-wave broadcasting is unsatisfactory in many cases. Serial production of equipment to detect and measure the industrial noise level was recommended.

At the closing plenary session, Professor S. Ya. Sokolov gave an interesting report on "Modern Supersonic Problems" and demonstrated a supersonic microscope.

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